

SEQUENCE LISTING

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Paloheimo, Marja
Suominen, Pirkko

<120> Novel Cellulases, The Genes Encoding Them and Uses Thereof

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<150> US 08/841,636
<151> 1997-04-30

<150> PCT/FI96/00550
<151> 1996-10-17

<150> US 08/732,181
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<150> US 60/020,840
<151> 1996-06-28

<150> US 60/007,926
<151> 1995-12-04

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<170> PatentIn version 3.2

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Gln Arg

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Val Tyr Leu Leu Asp Glu Thr Glu His Arg
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Thr Gly Ala Arg Ser Glu Leu Asn Pro
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Ile Xaa Gly Xaa Phe
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His Glu Tyr Gly Thr Asn Val Gly Ser Arg Phe Tyr Leu Met Asn Gly
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Pro Asp Lys

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Cys Lys Pro Ser Cys Gly Trp Arg Gly Lys Gly Pro Val Asn Gln Pro
35 40 45

Val Tyr Ser Cys Asp Ala Asn Phe Gln Arg Ile His Asp Phe Asp Ala
50 55 60

Val Ser Gly Cys Glu Gly Gly Pro Ala Phe Ser Cys Ala Asp His Ser
65 70 75 80

Pro Trp Ala Ile Asn Asp Asn Leu Ser Tyr Gly Phe Ala Ala Thr Ala
85 90 95

Leu Ser Gly Gln Thr Glu Glu Ser Trp Cys Cys Ala Cys Tyr Ala Leu
100 105 110

Thr Phe Thr Ser Gly Pro Val Ala Gly Lys Thr Met Val Val Gln Ser
115 120 125

Thr Ser Thr Gly Gly Asp Leu Gly Ser Asn His Phe Asp Leu Asn Ile
130 135 140

Pro Gly Gly Gly Val Gly Leu Phe Asp Gly Cys Thr Pro Gln Phe Gly
145 150 155 160

Gly Leu Pro Gly Ala Arg Tyr Gly Gly Ile Ser Ser Arg Gln Glu Cys
165 170 175

Asp Ser Phe Pro Glu Pro Leu Lys Pro Gly Cys Gln Trp Arg Phe Asp
180 185 190

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Cys Pro Glu Glu Leu Val Ala Arg Thr Gly Cys Arg Arg His Asp Asp
210 215 220

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 35 40 45

Asn Tyr Ile Val Leu Asp Ser Leu Ser His Pro Val His Gln Val Asp
 50 55 60

Asn Asp Tyr Asn Cys Gly Asp Trp Gly Gln Lys Pro Asn Ala Thr Ala
 65 70 75 80

Cys Pro Asp Val Glu Ser Cys Ala Arg Asn Cys Ile Met Glu Gly Val
 85 90 95

Pro	Asp	Tyr	Ser	Gln	His	Gly	Val	Thr	Thr	Ser	Asp	Thr	Ser	Leu	Arg	100	105	110	
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Leu	Asp	Glu	Thr	Glu	His	Arg	Tyr	Glu	Met	Met	His	Leu	Thr	Gly	Gln	130	135	140	
Glu	Phe	Thr	Phe	Glu	Val	Asp	Ala	Thr	Lys	Leu	Pro	Cys	Gly	Met	Asn	145	150	155	160
Ser	Ala	Leu	Tyr	Leu	Ser	Glu	Met	Asp	Pro	Thr	Gly	Ala	Arg	Ser	Glu	165	170	175	
Leu	Asn	Pro	Gly	Gly	Ala	Tyr	Tyr	Gly	Thr	Gly	Tyr	Cys	Asp	Ala	Gln	180	185	190	
Cys	Phe	Val	Thr	Pro	Phe	Ile	Asn	Gly	Ile	Gly	Asn	Ile	Glu	Gly	Lys	195	200	205	
Gly	Ser	Cys	Cys	Asn	Glu	Met	Asp	Ile	Trp	Glu	Ala	Asn	Ser	Arg	Ala	210	215	220	
Thr	His	Val	Ala	Pro	His	Thr	Cys	Asn	Gln	Thr	Gly	Leu	Tyr	Met	Cys	225	230	235	240
Glu	Gly	Ala	Glu	Cys	Glu	Tyr	Asp	Gly	Val	Cys	Asp	Lys	Asp	Gly	Cys	245	250	255	
Gly	Trp	Asn	Pro	Tyr	Arg	Val	Asn	Ile	Thr	Asp	Tyr	Tyr	Gly	Asn	Ser	260	265	270	
Asp	Ala	Phe	Arg	Val	Asp	Thr	Arg	Arg	Pro	Phe	Thr	Val	Val	Thr	Gln	275	280	285	
Phe	Pro	Ala	Asp	Ala	Glu	Gly	Arg	Leu	Glu	Ser	Ile	His	Arg	Leu	Tyr	290	295	300	
Val	Gln	Asp	Gly	Lys	Val	Ile	Glu	Ser	Tyr	Val	Val	Asp	Ala	Pro	Gly	305	310	315	320
Leu	Pro	Arg	Thr	Asp	Ser	Leu	Asn	Asp	Glu	Phe	Cys	Ala	Ala	Thr	Gly	325	330	335	

Ala Ala Arg Tyr Leu Asp Leu Gly Gly Thr Ala Gly Met Gly Asp Ala
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Met Thr Arg Gly Met Val Leu Ala Met Ser Ile Trp Trp Asp Glu Ser
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Gly Phe Met Asn Trp Leu Asp Ser Gly Glu Ala Gly Pro Cys Leu Pro
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<213> Melanocarpus albomyces

<400> 35

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His	Pro	Pro	Leu	Thr	Trp	Gln	Arg	Cys	Thr	Ala	Pro	Gly	Asn	Cys	Gln
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Thr	Val	Asn	Ala	Glu	Val	Val	Ile	Asp	Ala	Asn	Trp	Arg	Trp	Leu	His
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Thr	Leu	Lys	Phe	Val	Thr	Lys	His	Glu	Tyr	Gly	Thr	Asn	Val	Gly	Ser	115	120	125	
Arg	Phe	Tyr	Leu	Met	Asn	Gly	Pro	Asp	Lys	Tyr	Gln	Met	Phe	Asn	Leu	130	135	140	
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Gly	Ile	Asn	Ser	Ala	Leu	Tyr	Phe	Val	Ala	Met	Glu	Glu	Asp	Gly	Gly	165	170	175	
Met	Ala	Ser	Tyr	Pro	Ser	Asn	Gln	Ala	Gly	Ala	Arg	Tyr	Gly	Thr	Gly	180	185	190	
Tyr	Cys	Asp	Ala	Gln	Cys	Ala	Arg	Asp	Leu	Lys	Phe	Val	Gly	Gly	Lys	195	200	205	
Ala	Asn	Ile	Glu	Gly	Trp	Lys	Ser	Ser	Thr	Ser	Asp	Pro	Asn	Ala	Gly	210	215	220	
Val	Gly	Pro	Tyr	Gly	Ser	Cys	Cys	Ala	Glu	Ile	Asp	Val	Trp	Glu	Ser	225	230	235	240
Asn	Ala	Tyr	Ala	Phe	Ala	Phe	Thr	Pro	His	Ala	Cys	Thr	Thr	Asn	Glu	245	250	255	
Tyr	His	Val	Cys	Glu	Thr	Thr	Asn	Cys	Gly	Gly	Thr	Tyr	Ser	Glu	Asp	260	265	270	
Arg	Phe	Ala	Gly	Lys	Cys	Asp	Ala	Asn	Gly	Cys	Asp	Tyr	Asn	Pro	Tyr	275	280	285	
Arg	Met	Gly	Asn	Pro	Asp	Phe	Tyr	Gly	Lys	Gly	Lys	Thr	Leu	Asp	Thr	290	295	300	

Ser Arg Lys Phe Thr Val Val Ser Arg Phe Glu Glu Asn Lys Leu Ser
305 310 315 320

Gln Tyr Phe Ile Gln Asp Gly Arg Lys Ile Glu Ile Pro Pro Pro Thr
325 330 335

Trp Glu Gly Met Pro Asn Ser Ser Glu Ile Thr Pro Glu Leu Cys Ser
340 345 350

Thr Met Phe Asp Val Phe Asn Asp Arg Asn Arg Phe Glu Glu Val Gly
355 360 365

Gly Phe Glu Gln Leu Asn Asn Ala Leu Arg Val Pro Met Val Leu Val
370 375 380

Met Ser Ile Trp Asp Asp His Tyr Ala Asn Met Leu Trp Leu Asp Ser
385 390 395 400

Ile Tyr Pro Pro Glu Lys Glu Gly Gln Pro Gly Ala Ala Arg Gly Asp
405 410 415

Cys Pro Thr Asp Ser Gly Val Pro Ala Glu Val Glu Ala Gln Phe Pro
420 425 430

Asp Ala Gln Val Val Trp Ser Asn Ile Arg Phe Gly Pro Ile Gly Ser
435 440 445

Thr Tyr Asp Phe
450

<210> 36
<211> 887
<212> DNA
<213> Melanocarpus albomyces

<400> 36
ccatggacgc gaactgacgc gtcttctgcc ccgagctgaa gaccagagc atccagaccg 60
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tgcccggcaa cgtcccatc accggtccgc agcccggctc tggttaagtca aagagatgat 180
gcctacctac cttccacct tcccacccag ccgcaaatac ctttctccct ccccggtgcc 240
cgtattcttt caacgccccg agactgacag acccgctcgt cccaggcggc aaccccgga 300
acggcggcgg cagcaacccg ggcaacggcg gcggcggcgg ctgcaccgtc cagaagtggg 360
gccagtgcgg cggcatcggc tactcgggct gcaccacctg caaggccggc tcgacctgcc 420
cgccccagaa cgagtactac tcgcagtgcc tgtaaagcgg ccgtgggcta ggtggccgag 480


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cggggggggtt tcttcattgg ttgagcaaat agaacaggat ttccggctcg ttggcagcgg      540
cgcgccgcgg ggatggtggt gtacaattca agacctcagt accgaggagac ctggaaagga      600
gtcagtctgc ttgtacggag gctggctgcc ccgtggcggc gctggcaagg tagatagccc      660
ttcattgctg taactagtat gctatataacc tctgcacatt tgcagcccca tgggtgtgaac      720
aacaagtgac aaggcttcca gttccagcct cgcgcaattg tcacgatata cttgggtccat      780
ctatatgtat gggcatgagc gagtcgagaa aatgtaccgc gaaaaatcgt agtgacctgc      840
gcactgcgcc gttctaccac cgtaggattg aagtgaatct cgaattc                      887

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<210> 37
<211> 34
<212> PRT
<213> Melanocarpus albomyces

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<400> 37

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Gln Lys Trp Gly Gln Cys Gly Gly Ile Gly Tyr Ser Gly Cys Thr Thr
1           5           10           15

```

```

Cys Lys Ala Gly Ser Thr Cys Pro Ala Gln Asn Glu Tyr Tyr Ser Gln
          20           25           30

```

Cys Leu

```

<210> 38
<211> 29
<212> DNA
<213> Unknown

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<220>
<223> PCR Primer

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```

<400> 38
atagaattct aytgggaytg ytgyaarcc

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29

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<210> 39
<211> 26
<212> DNA
<213> Unknown

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<220>
<223> PCR Primer

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<220>
<221> misc_feature
<222> (15)..(15)
<223> n is a, c, g, or t

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<400> 39
atagaattct trtcngcrtt ytgraa

26

<210> 40
<211> 17
<212> DNA
<213> Unknown

<220>
<223> PCR Primer

<220>
<221> misc_feature
<222> (9)..(9)
<223> n is a, c, g, or t

<400> 40
gaygaracng arcaymg

17

<210> 41
<211> 17
<212> DNA
<213> Unknown

<220>
<223> PCR Primer

<220>
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<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (6)..(6)
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<222> (9)..(9)
<223> n is a, c, g, or t

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<221> misc_feature
<222> (12)..(12)
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tangcncnc cnggrtt

17

<210> 42
<211> 17
<212> DNA
<213> Unknown

<220>

<223> PCR Primer

<220>

<221> misc_feature

<222> (15)..(15)

<223> n is a, c, g, or t

<400> 42

aarcaygart ayggnac

17

<210> 43

<211> 17

<212> DNA

<213> Unknown

<220>

<223> PCR Primer

<220>

<221> misc_feature

<222> (12)..(12)

<223> n is a, c, g, or t

<400> 43

ccrtaraart cnggrtt

17

<210> 44

<211> 15

<212> DNA

<213> Trichoderma reesei

<400> 44

ccgcggactg gcatc

15

<210> 45

<211> 16

<212> DNA

<213> Trichoderma reesei

<400> 45

ccgcggactg cgcac

16